

Informatics may handle Personal Computer

by Claire Gooding
PLANS to incorporate the IBM Personal Computer into its software strategy were revealed by Informatics last week. The multi-million dollar company signalled its intention as it announced its European headquarters had moved to the UK.

It expects the IBM Personal Computer to play a major part in large data processing shops in the next few years.

Informatics chairman and president Walter Bauer speculated that the day might come when Informatics would act as a dealer selling its software applications on the PC machine.

"Market research figures show that the IBM Personal Computer is selling to the Fortune 100 market more than any other," said Bauer. "It's our job to service that market, and that means not just mainframe software but extending to

the micro as well.

"We in the computer services industry will have the marketplace to ourselves. The pattern emerging is that services sell hardware. Since we already sell applications, with 10% more effort we could sell hardware as well," said Bauer, who predicts \$10 million worth of hardware sales for Informatics in 1982.

In the US Informatics has already gone some of the way towards building software which will turn a microcomputer into a programmer's workbench, a terminal, or an end-user query facility according to the skill of the user.

The product is called Informaticom, and at present is working on an eight-bit Intel microcomputer which links with mainframes to do a variety of jobs including terminal emulation. The software techniques developed in Informaticom will be adapted to the IBM PC. Informatics is waiting for IBM

to fulfil its statement of intent to provide full 3270 emulation for the Personal Computer but in the meantime work is proceeding on the syntax for the end user.

"We see the Personal Computer as the way for the market to go," said Ian Durrell, who is the new general manager of Informatics' European operations for the software products group. "It fits in with the concept of providing an information centre which can act as a programmer's workbench."

Informatics' plan is to turn the PC into a tool which can be as useful to the unskilled end-user making queries as to the experienced programmer wanting full mainframe facilities. Users should be able to fetch data from remote mainframes or execute programs written on the PC wherever the relevant data may be.

The IBM Personal Computer is being groomed for a role in the electronic office when it reaches



BAUER... "We will have the marketplace to ourselves."

the UK later this year.

Peachtree, whose financial software was picked by IBM for the Personal Computer, is hoping that its office software will also win the IBM logo.

The software includes word processing, spreadsheet calcu-

lation, mailing and telecommunications packages sold in the UK as the Magic range. The latest release, Magic Messenger, otherwise known as Peachtree Telecommunications, cracks the problem of CP/M to CP/M communications via a modem.

SERC to get first Atlas 10

by Maggie McLanigan
THE Science and Engineering Research Council (SERC) is to be the first user of ICL's IBM-compatible Atlas 10 machine.

Announced six weeks ago, the Atlas is ICL's first collaborative venture with Fujitsu, and the Model 10 is the Fujitsu 380, with a 15 mips rating and 16 megabytes of main store.

SERC has placed an order for one of the £4 million machines to be installed at its Rutherford Laboratory in Oxfordshire, where it will work alongside the two existing IBM 370/155 and an IBM 3032 front-end processor.

"The Atlas will be used to ease part of the burden of the 1984, in providing a service covering all types of science, particularly nuclear physics, to over 1,000 registered users from British academic organisations," said Brian Oakley, secretary of SERC.

This is not the first ICL equipment that SERC has bought, having invested in about 80 Perq intelligent workstations, and an ICL 2960 mainframe which will be used to control the Infra Red Astral Satellite (IRAS), a joint project with Holland and the US, when it is launched next year.

"We expect the Perq terminal to be linked into the Atlas machine," said Oakley. "This will expand the laboratory's already large network, which covers most of the universities in the country."

The machine is due to be installed in May 1983, and this announcement leads to speculation that the other order hinted at by ICL at the launch of the Atlas range in May may also be confirmed soon.

EEC aid to Silicon Glen

THE Scottish information technology industry this year had a £1 million boost from the European Community.

BEC grants announced last week included cash for "Silicon Glen" in the form of money for the chip factory of US-owned General Instruments, for Rodime of Kirkcaldy, the computer peripheral maker, and for Fortronic's Dunfermline plant, which makes electronic banking equipment.

The BEC cash for Scotland was part of a £79 million package.



MINOTTO... Two Computerland stores planned for UK.

Dealers signed up for UK launch

by Boris Sedacca
IBM is signing up UK dealers for its Personal Computer.

There are firm indications that the IBM Personal Computer will be launched in the UK first this summer and the machine is expected to get its first official European showing at the Sibob exhibition to be held in September in Paris.

Dealers are tight-lipped about the whole affair, Comart marketing director John Lamb was reluctant to comment on his company's discussions with IBM other than to say that it had expressed to IBM its interest in stocking the machine.

"I doubt whether anyone has been signed up yet," he said. The European operation of the giant US Computerland chain will almost certainly stock the machine. Its president, James Minotto, is currently negotiating franchise agreements with the intention of opening two UK stores soon.

"Our Computerland stores in the US and Canada sell a lot of IBM Personal Computers. It is a good product and highly professional. One of our franchisees in Boston does not even bother trying to sell other micros because he knows the IBM machine so well," said Minotto.

He added: "IBM runs a six-day training course for the machine - something you do not get with other micro manufacturers like Apple. We integrate this within our own three-week training course, which we run once a month now that we are opening stores at the rate of eight to ten a month in Europe."

Minotto plans to open 40 Computerland stores in Europe by the end of the year including the two in the UK. Central purchasing and distribution is based in Luxembourg and Minotto claims to be able to offer an order turnaround time of 24 hours.

Although Computerland in the US will terminate its purchasing

agreement with Apple in July, this will not affect the European operation which has a separate agreement with Apple Europe.

Computerland Europe was first set up in December 1978 by Gordon Starr and currently has 17 shops, seven of which are in France. Computerland France operates as a separate subsidiary from Computerland Europe because of exchange control regulations. Minotto took over Computerland Europe in July and plans eventually to hand over the French company to a Frenchman.

He emphasised that Computerland never had any dealings with Microcomputerland.

Microcomputersource director Norman Park has responded angrily to Microland's assertion that he had approached them for IBM Personal Computers. "We have delivered eight machines which we sold for £2,213, so what would I want to buy them from Microland at £2,450 for?" he said.

IBM in satellite share talks

by Kevin Pearson
IBM could have a share of two different satellite services in the UK by 1986 if talks with British Telecom and British Aerospace reach fruition. The company is already involved with Satellite Business Systems, which plans to introduce a satellite service to the UK later this year.

The UK negotiations, which also involve GEC Marconi, concern the provision of a multi-

purpose data communications service directly between customers in the UK and to the US and Canada. It would be carried by Unisat, which is due into orbit in 1986.

IBM's other satellite operation, SBS, of which it is one of the principal shareholders, plans to launch its own service to the UK and to Canada later this year using Intelsat's transatlantic satellite for data transmissions at up to 56 Kbits a second.

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Printed in Great Britain by QB Limited, Sheepen Place, Colchester CO1 2JL, and published by IPC Electrical-Electronic Press Ltd., Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS.

UK plans for Cobol clear a major hurdle

by Claire Gooding
A UK proposal to streamline Cobol, the world's most widely used computer language, has cleared the major hurdle to acceptance, after seven-year battle.

Codasyl (Conference on Data Systems Languages), the US-based group which is the world's main technical arbiter on commercial computer languages, has agreed on specifications for a "Validate" verb. Designed to eliminate tedious data validation methods of current Cobol, it is already in use in UK installations such as British Gas.

"Unlike some things implemented by Codasyl, Validate is a high level facility," said John Triance, former chairman of the BCS Cobol Specialist Group. "It is talking to the DP man in his own language. We like to think it's the way the language is going."

"Without the BCS effort nothing would have happened. I must admit I didn't think it would make it because of the sheer size of the proposal."

Cobol standards are strictly controlled, and the proposals have had to pass through as many stages

as a Parliamentary Bill before final approval.

Now that Codasyl has agreed on a detailed specification of the Validate verb, it is likely that the Ansi standards authority will agree to "rubber stamp" the changes. It is now up to individual manufacturers to implement the Validate verb in their Cobol compilers along the lines established by Codasyl.

The British Computer Society started the Validate ball rolling some years ago. The idea was to do away with the clumsy validation processes by putting all data specifications into the Data Division.

Instead of validating each input, which can involve hundreds of lines of repetitive coding, the programmer can refer to the information coded in the Data Division. One instruction in the Procedure Division, "VALIDATE", refers back to the specifications and automatically checks the validity of the item.

This puts the effort of coding into the Data Division rather than the Procedure Division, a development which is not only economical, but fits in with the trend

towards using Data Dictionaries.

Codasyl approved the idea in principle over a year ago after rejecting it in 1975. But it did not vote to approve the detailed specification until its latest meeting in May. The complex proposals were passed almost unanimously, keeping close to the original British proposals.

Validate will now be written into Codasyl's Journal of Development, the master source of all Cobol device manuals, and may even appear in the next Ansi standard, already under preparation. "It's a fantastic achievement for a proposal of this size and complexity - it is by far the largest language proposal ever to get past," said John Piggott of S-P-C, who chaired the BCS Cobol working party on the Validate proposals.

Piggott maintains that the changes Cobol is undergoing will keep it as the top DP language of the Eighties. "The next step is to implement screen-handling facilities. In a year's time we'll be seeing proposals which go much further than simply handling transactions, changes which deal with all facets of VDU's."

Ford looks for 3,000 development systems

by Claire Gooding
ONE of the biggest software contracts in the commercial world is up for grabs as US car manufacturer Ford seeks over 3,000 new development systems.

Ford plans to introduce up-to-date in-house development software at its headquarters in Dearborn, Michigan, and reportedly has up to \$50 million to spend on the scheme.

There is speculation that it will plump for a system based on Unix, the operating system which has already been adopted from Western Electric by a number of manufacturers in the 16- and 32-bit micro and mini market.

The car manufacturer has been studying its requirements for some years, and has put out a detailed tender for a system which will support software development as well as executive workstations throughout the headquarters.

It is thought that over 3,000 units will be needed for the job. A Unix-based system is favourite for the contract because of its flexibility.

The name at the top of the list to win the contract is Fortune Systems, say industry observers in the US. The Fortune machine was introduced late last year and caused a sensation in the already crowded mini/micro market.

The system is based on the powerful and long-awaited Motorola 68000 chip, and Fortune had spent a lot of money in creating an end-user harness for Unix. The operating system is a good programming tool, but lacks applications and user interfaces, two deficiencies which Fortune claims to have put right.

"We know that Ford looks favourably on our system," said Fortune Systems president Gary Freedman.

Xerox acts on lagging micro sales

by Howard Karten
XEROX last week took steps to correct lagging sales of its Xerox 820 microcomputer, introduced a year ago. Sales of the 820 are soft and have caused concern at Xerox's office products headquarters in Dallas.

UK sales are said by Xerox to be "going as well as expected", but they are understood to be sagging here too.

Xerox last week announced the Xerox 820-11 in the UK, for delivery in August. It is set to have twice the computing speed of the original machine and four times as much disc storage capacity. The much-discussed Xerox company also dropped the Xerox 850 word processing system from its product roster, but plans to build about 3,000 more systems to meet current commitments. The 820-II is being targeted at business and professional users.



TRIANCE... "It's talking to the DP man in his own language."

Inmos may ask for £10m more

by Robert Parry
BRITAIN'S State-backed semiconductor company Inmos will probably need an extra £5 million to £10 million next year.

Inmos remains silent on the level of finance it will be looking for, but the National Enterprise Board - through which the company has received nearly £100 million of State aid in grants and loans - expects it to need a "little more money" as working capital to enable it to reach profitability.

The NEB, which is now part of the Privy Counsellors' need for extra money is a problem of growth and success, not of failure, and that the gap to be bridged might well disappear anyway.

Both Inmos and the NEB have already said that Inmos will need further finance some time, but the amount, and the method and timing of raising it, have been kept well shrouded.

The money for next year ideally



WOOD... Ready to recommend government to provide the funds.

NEWS BRIEF

ICL unions set to accept pay offer

ICL's unions look set to accept the company's pay offer - but only until the end of the year.

Votes were still being counted as we went to press, but Tim Webb of white collar union ASTMS said: "Based on the initial returns the offer is likely to be accepted. But we will be back at the negotiating table at the end of the year, when we know the profit figures."

Super centre

CONTROL Data has opened what it claims is the world's most powerful commercial computing centre in Minneapolis. Accessible from the UK via satellite links in CDC's Cybernet network, the centre contains nine large-scale computers, enabling users to solve problems that are impractical for conventional installations.

\$5,000 fellowship

UK computer history graduates could take in \$5,000 plus expenses courtesy of computer pioneer Charles Babbage. The University of Minnesota's Charles Babbage Institute for the History of Information Processing is offering its fifth annual fellowship, to be taken at any appropriate institution. The address of The Institute is 104 Walter Library, 117 Pleasant Street, SE, Minneapolis, Minnesota.

Logica study

LOGICA is to continue the £2 million work it did for the European telecommunications authorities under the Eurodata 79 study contract. It is making a multi-client study of the information technology markets in Western Europe for a group of UK, Continental and American companies.

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Towards the total system.

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5,000 visitors turn out for New York show

THERE was something for everyone at the Videotex 82 conference held in New York last week, as some 5,000 visitors - in states ranging from moderate to extreme enthusiasm - turned out to view more than 50 exhibits and listen to nearly 100 papers.

The papers ranged from such abstract topics as "Computer networking for Bildschirmtext" to such practical ones as Oracle Teletext's Humphrey Metzger speaking on "Making money from Teletext".

This year's event was well-attended, and conference organisers were clearly pleased with the turnout.

The meeting, with more than 2,000 square metres of exhibition space, clearly eclipsed last year's to the delight, and sometimes consternation of the harried exhibition and registration personnel.

Among the British firms represented were BVT, Mullard, On-

line Conferences, Rediffusion, and Computex Systems.

IBM took over an entire room to present the offerings of IBM in different countries, and the IBM suite was well-attended, no doubt stimulated in part by its recent product announcements.

An interesting contrast could be seen in another room holding several Japanese companies which were demonstrating products and services available through Captain, the Japanese videotext effort.

Possibly in the wake of the IBM spying affair, the suite drew relatively few visitors.

Making money via the use of videotext and teletext seemed to be number one topic in the minds of many attendees. Several speakers explored the possibilities of using advertising in conjunction with videotext and teletext, and discussed their research to date.

The corporate logo for videotext and videotext participants might

well be the question mark, observed Gary Arien, publisher of a videotext newsletter, since there were still so many unanswered questions.

That theme was reiterated at a Press conference. Addressing a group of domestic and foreign journalists, John Butcher MP, Under-Secretary of State for Industry, pointed out that although television was actually invented and first transmitted in Scotland, "it took the Americans to turn it to effective (ie profit-making) use. I hope that happy partnership can be evoked again."

Butcher also noted that "this conference is about people making money - suppliers, information providers, system operators." He went on to cite growth statistics on Prestel - growth in the number of installed sets, in the number of information providers, the number of frames available, and so on.

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BUTCHER... "This conference is about people making money."

No room for emotion on viewdata systems

UK firms were well represented at Videotex 82, both in the exhibits section and as speakers.

Roy Vivian, principal engineer in the automation and control section of the experimental development department of the Independent Broadcasting Authority, noted that the IBA booth had attracted so much attention that it was on the point of running out of literature.

Indeed, IBA's Level Four teletext display stopped many passers-by, but Vivian said he doubted whether Level Five teletext would prove practical in terrestrial transmission.

At a conference session exploring advertising as a money-making venture, Alan Wolfe, marketing services director for advertising firm Ogilvy and Mather of

London, echoed a common theme with his observation that teletext seemed to be particularly well suited for use as a mass consumer medium, while videotext was increasingly seen as a business-to-business medium.

In an observation remarkably candid for an advertising insider, Wolfe noted that "Gimmicky graphics seem less important than information - you can't effectively run 'emotional' material on videotext."

In another session Arnold Reymers, president of marketing research consultants Reymers and Gerain Associates of Southfield, Michigan, noted that potential videotext users seemed receptive to the idea of ads and shipping guides embedded in videotext.

At a conference session exploring advertising as a money-making venture, Alan Wolfe, marketing services director for advertising firm Ogilvy and Mather of

Network interface and gateway feature in spate of announcements

VIDEOTEX 82 was the scene for a spate of announcements relating to studies and products.

AT&T launched a Frame Creation Terminal intended for use by system operators or information providers in entering information or modifying existing frames. The \$34,000 device consists of a control unit, colour monitor, keyboard, and graphics tablet, and can display more than 65,000 shades.

The unit is currently being tariffed in Florida, and Videodata Corp of America, a subsidiary of Knight Ridder Newspapers, will be the first customer. The FCT will later be offered by American Bell, the newly named, unregulated arm of AT&T.

CCG, the computer communications group of the Trans-Canada telephone system, announced that it would begin a one-year field trial of its iNet gateway concept. The trial, due for launch on July 12,

will place 250 Telidon terminals and 150 standard alphanumeric terminals in businesses and some consumer environments throughout Canada.

The iNet gateway is described as a "single point of access to simplify gathering, using and communicating information for users."

Ayr Viewdata of Surrey announced that it had introduced its range of Prestel and Teletext set-top decoders to the US market.

Systemhouse of Ottawa, Ontario, a major Canadian consultancy, announced the availability of videotext software for the Hewlett-Packard HP3000 computer. The Systemhouse software is compatible with AT&T's proposed PLP standard, according to a spokesman.

AT&T also announced the availability of specifications for two interfaces to a Bell system network currently in the planning stages. The network, now being called Local Area Data Transport (LADT), would provide packet switching services at speeds ranging from 9.6 Kbps to 56 Kbps. It is expected to be introduced between 1983 and 1985, subject to political and regulatory approval, and would provide packet switching data transport accessible through the public switched network.

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SALES BRIEF

Cranfield first for VAX-11/782

DIGITAL EQUIPMENT CORP. has announced the first sale of a VAX-11/782, which consists of two tightly-coupled 11/780s and an MA780 shared memory subsystem, has gone to Cranfield Institute of Technology. It will be used for computer-aided design and engineering work including finite element analysis.

The system will be linked to dual-ported disc and tape units on an existing 11/780 which has seen a 30-fold increase in usage since it was installed at the end of 1980.

Power to Sigma

HORSHAM-BASED Sigma Electronic Systems has won a £160,000 order from the Canal Electricity Generating Board for Sigma Series 7000 high-resolution colour graphics display controllers. The controllers will be used to develop display software for fault location systems in six pit control centres. Equipping the centres with controllers over the next three years could bring Sigma a total of over £1.5 million worth of orders. Each centre is to have about 20 displays.

Brown Box

CITIBANK has ordered three of Brown's Box Model 3299 terminal cluster controllers (no Blackheath-based Brown's Operating System Services). The controllers will be used to handle up to seven dial-in calls at a time from a wide variety of types of terminal customers' offices to Citibank's IBM mainframes. The bank will now have a total of 37 Brown's Boxes in branches including Tokyo, Madrid and Puerto Rico.

Printer deal

ANADIX has won a £100,000 order for its DP-9501 20 character per second impact matrix printers from graphics systems supplier Westward, which plans to sell them with its display terminals as graphics workstations.

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SOFTWARE BRIEF

Colour graphics for Apples

LEADING Apple supplier Personal Computers is to sell colour graphics software and a high definition plotter to interface with the Apple micros. Priced at £75, the PPS Graph software generates line, bar and pie graphs. The Hewlett-Packard HP 7470 plotter, which costs £969, gives a choice of 10 colours and uses two pens simultaneously.

Air freight system

REVENUE control and cost information for air freight companies is offered with the Airpak system developed by Freight Computer Services, a subsidiary of the National Freight Consortium. Designed on a "building block" concept to be flexible to all sizes of company, Airpak costs from £20,000 and runs on Honeywell Level 6 minicomputers, under the GICOS MOD 400 operating system.

Motor trade aid

BUREAU Automatic Data Processing has launched an order entry system aimed at dealers in the motor, agricultural machinery and factoring trades. Called ADP On-line, it has already been available in the US for nine years, and links parts stock control with comprehensive accounting facilities to provide an order entry and point of sale invoicing system. It costs around £145 per week to run.

APL courses

INTERNATIONAL time sharing bureau I. P. Sharp Associates is holding courses in the use of APL around the UK throughout July. Venues include London, Bristol, Coventry, and Aberdeen. Courses cost between £75 and £250 depending on subject and duration. For further information, contact Margaret Joachim, I. P. Sharp Associates, 132 Buckingham Palace Road, London SW1.

For estate agents

AN estate agents' system has been designed by Business and Administration Systems of Borehamwood, Herts. Written in Pascal to run under CP/M or MP/M on the Rair Black Box micro range, it includes word processing facilities and gives full details on the current position of any property or applicant.

Omnix milkman

TAPPING the milk market, Computer Automation has appointed Worcester-based Orchard Data as an Omnix franchisee to penetrate the retail milk delivery trade. Orchard Data has developed the Roundman package to run on CA's Naked Mini range, which is compatible with Omnix. The Roundman handles up to 50 rounds per day and costs about £10,000 inclusive of hardware and software.

Personnel admin

BRISTOL based United Personnel Services has launched the System 90 personnel administration package. It is timed to be available to comply with new Employee Statutory Sick Pay (BSSP) legislation, effective April 1983. Written for Texas Instruments' range of minis and micros, System 90 is a development of the System 80 pensions administration software, and can be tailored to fit individual needs.

Learning CP/M

A HANDS-ON self-instruction package for the CP/M operating system has been announced by Heathkit/Zenith Educational Systems, a division of Heath Electronics.

SOFTWARE FILE

'The industry is under-selling itself' - BIS chief

by Kevan Pearson

IBM has a lot to teach the software industry about selling their products, Roger Graham, managing director of BIS, told a specialist group at the World Computer Services Industry Congress in Copenhagen at the end of last month.

"Software manufacturers have to understand what IBM understands about this business, that the marginal cost of the product is under 20% of the total cost, the rest is marketing, distribution, support, maintenance and profit."

"We are under-selling ourselves. The future of the industry lies in spending more money and effort on marketing its products," Graham said.

His arguments are a direct rebuttal of the position taken by Philippe Dreyfus, vice-chairman of Cap Gemini-Sogefi, who told the congress that the future of the software industry lies in applying more resources to programming

and systems analysis, and less to marketing and selling.

Graham also said that most of the growth in the software market in the future will be in providing packages for specialised industry applications, and not in the mass market packages like payroll systems and other financial packages. "Packages will become much more 'industry specific'," he said.

Another significant change will be the growth of "software OEMs", companies which take the products of another software house and who add value to these products to sell either to end users or to other manufacturers. We have already seen this kind of thing in the micro software market, said Graham.

One of the notable examples is the micro-based relational database system MDBS 3, which is being used by a number of British micro software companies both as



GRAHAM... IBM understands the software business.

a development tool and as an integral part of their own products.

In terms of the international market, Graham said that overseas expansion is best achieved by set-

ting up a directly owned subsidiary, or an agency.

Distributors are only suitable for micro software costing less than \$5,000.

Emulator replaces DRS 20

A PACKAGE from MAP Computer Systems may undercut ICL's sales of DRS 20 terminals by offering a cheaper link with mainframes.

Oldham-based MAP has developed an emulator for ICL's CO2 mainframe protocol that allows any microcomputer running under the CP/M operating system to be linked with ICL's 1900 and 2900 range of machines as a 7502 intelligent terminal. Although ICL is gradually phasing out the 7502s, it intended them to be replaced by its own DRS series, and MAP now offers ICL users a far cheaper alternative.

There are emulators for ICL protocols already available on the market, but these are usually in the form of a board that slots into the back of the micro, and the user has to buy a specific make of computer as part of the package. MAP's emulator offers users the chance to connect an existing machine into the mainframe for about £1,000, including installation assistance and support.

COMDEX SPRING 1982

Sweet smell of success for transatlantic ZX81

TS1000. A million units will have been shipped worldwide by the end of this year and it would be more easily recognised in the UK under its original name as the Sinclair ZX81.

In its transatlantic version the T stands for Timex and the S for Sinclair.

Since its launch in Chicago early this year the demand has been enormous according to the Timex stand staff at Comdex Spring 1982, in Atlantic City. One of these said: "Supplies are going to be the problem." But this will not be a new difficulty for Sinclair and Timex.

Sinclair's new machine, Spectrum, is not yet available in the US but "Timex cannot wait to get its hands on them".

IBM had brought its prototype flat screen plasma display to see if

in walking past the stand, let alone trying to actually see the device, interest was reasonable. The device itself was an elegant piece of hardware, with a screen 13 inches by 10, and will be available in any colour you like as long as it's orange, should it go into production.

The IBM stand was one of the few not to have the IBM Personal Computer on display. Latest rumour on the PC British launch is this autumn.

Adam Osborne, the power behind the Osborne 1 portable computer, announced at his Press conference at Caesars Palace, an agreement with Softech Microsystems of San Diego to supply the UCSD p-system operating system free with each Osborne machine sold.

"I've moved away CP/M with each VisiCalc because they were developing into industry standards, not because they were the best," said Osborne.

"IBM taught us that you don't have to be the best to succeed; you don't even have to be good."

"CP/M is an adequate operating system, but we must go with Pascal, and any program written on a p-code machine can be run on any other p-code machine. P-system has a standard diskette format, and it's the first step towards an industry standard."

Asked when the large-screen Osborne would become available, he observed that most of the complaints on the screen size come from people who don't actually own one of his machines. "There's an upgrade coming in early September."



OSBORNE... "IBM taught us that you don't have to be best to succeed."

P-system also found favour with several other luminaries at Comdex. Portia Isaacson, president of Texas-based Future Computing, went as far as to say "The last

thing you want on a microprocessor is a minicomputer-type shared processor operating system like Unix - p-system wins every time."

At one of the seminars the ubiquitous Adam Osborne observed that there are two types of software: the non-modifiable product such as games and word processing packages, and the customised applications products.

"The modifiable software will always be the preserve of end software houses," stated Osborne. "If the big companies try it they will get killed."

Another statement of corporate policy came out of this meeting this time from DEC vice-president Irwin Jacobs: "DEC intends to have a 20% share of the microprocessor market within two years."

The latest products from DEC are probably the best-conceived entries to the already crowded micro market. The micro/PDP-11, announced at the NCC at Houston earlier this year, put in its first public appearance. Selling at less than \$10,000, it provides PDP-11/23 performance in a box less than six inches high, and that includes 10.8 Mbytes of disc storage. All DEC's operating software will run on the new product, including RSTS and RSX-11M-plus.



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Letter service for UK

AMERICAN communications specialist Western Union has launched a version of its Priority Mail Service in the UK.

It is a joint project with English China Clays, whose ICL dual 2960 mainframes and three MB29 terminals are to be used as the base of the system. Eventually, Western Union hopes to set up a network of printers and terminals throughout the country.

Although primarily aimed at companies or individuals wanting to send a message to a group of people, or mass mail shots, Priority Mail can be used for single letters. It costs 20p if the recipient lives within London, the South-East, East or Greater Manchester. The price rises to 25p if outside the range of the Post Office's electronic sorting system.

Contents of the letter can be sent to Western Union by telephone, telex, word processor, terminal, facsimile machine, or on a magnetic tape. Tape can also be used for sending a mailing list. Western Union reformats the message, sorts the list of recipients to avoid duplicates, prints them in London, and sends them by first class post within 24 hours.

At the moment, it is primarily of use for mail shots, but from August there will be a link-up with the US service and there are plans to further extend the service.

"We are poised to announce that we are extending the system into Europe in the near future," said Jack MacWilliam, managing director of Western Union. "There are more than 2,400 terminals linked into the service in the US at the moment, where the network has been running for the past three years."

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SYSTEMS THOUGHTS

Prejudice against colour in computing

A FEW weeks ago I was fortunate enough to see a demonstration of the "SeeWhy" simulation system produced by BL Systems. A prominent feature is its use of moving colour graphics to represent the formation of queues and flow of transactions through typical systems under study, such as a supermarket or production line, for example.

Without the graphics this would have been just another simulation system, but the effective use of colour graphics made it possible for a user not very well versed in statistics and probability theory to interact with the model directly and answer "What if?" questions.

The demonstration reminded me of a fundamental question that has interested me for some time: the prevalence of monochrome VDUs in data processing applications.

Colour is such an important dimension in our perception and speed of learning, that it is curious to speculate why it is not more widely used in data processing applications such as online transaction processing. Granted the original reason was one of available technology and costs, but now that colour graphics are a standard feature of many cheap micros, this is no longer the dominant factor.

It is some time now since IBM announced colour VDUs, and other screen manufacturers also have colour available on their character VDUs, yet there still seems

to be comparatively little interest in making use of colour as a dimension of systems design for DP systems.

The complexity of programming is not an excuse and field formatted screens can make use of attribute bytes to set colours in a similar way to making a field protected or double brilliance, for example.

The question is even more interesting when the widespread use of colour in clerical systems is considered. We all know multi-part forms where the pink copy goes to finance, the white to sales and so on. The colour is such a useful aspect of the information conveyed that it is surprising not to find it playing a similar part when these systems are computerised.

A certain amount of this may be attributed to technology "lag", though I cannot help feeling that the reason may be more fundamental.

Perhaps the way colour is used in a clerical system is less effective in the information it conveys than using any of the extra "dimensions" available on standard VDUs such as flashing fields or audible alarms, so there is no real need for colour when these systems are translated on to VDUs.

The use of colour in multi-part forms certainly does not usually contribute extra information to that printed or written on the form itself, but serves to assist the retrieval and distribution of the documents and also acts as a clerical



Norman Revell is a lecturer with the business systems analysis team at City University, London. He is a consultant with IBM and several other companies.

I doubt that there is much prejudice against colour on the part of the designers and programmers of online systems — as a group they constitute the heaviest users of coloured fluorescent pens that I know! Nor is the use of colour for text information on screens all that novel. Many of the games available on the domestic micros previously referred to make use of it, as do Prestel and other related systems.

To summarise: Are colour VDUs providing facilities that DP systems do not need and, by implication, clerical systems only use because of their inherent limitations or is the added dimension of colour something that we are not really exploiting in DP systems yet?

I would be interested in the views of readers via the CW correspondence columns — especially those using colour VDUs for online transaction processing applications.

Norman Revell

HUMAN TOUCH

Getting to know your data

LEAVING aside all the frills, improvements and variations there are just two basic ways in which data can be represented to a computer. When the data reaches a program, that program has to know what the data is in the sense of what processing is to be applied.

The program may know what the data is either implicitly or explicitly.

If the identity of the data is to be known implicitly, then this is much the same as saying that you have to know what the data is before you start. The data is identified by its position. That position may be characters 10-15 on line four of a particular screen, or following the sixth comma entered in a line of job control instructions. Do not be confused by the fact that a description of the data appears on the screen immediately before positions 10-15 on line four.

The program will not look at that description in order to know what data has been entered. The description is a constant provided by the program and in the very best systems can be altered by the user so that he can follow his own preferred descriptions of the data.

The knowledge of what a particular item of data is, is implied by its position relative to other data (as in a list) or relative to some location (as on a screen or in a punched format). It is this implication that gives the name implicit to the method of data representation.

If the identity of the data is to be known explicitly then some entry has to be made, the data that usually follows. A typical entry is SIZE — followed by the data. The program knows by this explicit entry of a name for the data what it is that follows.

The implicit method of identifying data is usually found when the same set of data items must be entered repeatedly. The explicit method is useful when a few items of data from a possibly large set have to be entered at the choice of a user.

Cliff Dillaway



Cliff Dillaway is an independent consultant specialising in accounting, software, taxation and payroll.

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Cliff Dillaway

10 YEARS AGO

From Computer Weekly of July 6, 1972

THE provision of £14.2 million government support and a firm rejection of any idea of a takeover of ICL by US computer firms were the main points in a statement in the Commons by Industrial Development Minister Christopher Chataway. Financial support fell considerably short of the £50 million a year recommended by the Select Committee on Science and Technology.

DOWNTIME

What upset the other princess

SEVERAL explanations have been offered for Princess Anne's expression of ignorance and indifference about the birth of our future King William V (barring revolution or cataclysm). One is that Anne cannot forgive Charles for looking like Big Ears rather than a horse.

Another explanation, less likely from the front line of accession to the throne.

A glance at the picture accompanying this anecdote shows what Anne was actually doing while the charming Princess Di was making such light work of her labour in London — looking round the Inmos chip factory in Colorado, conferring a formal blessing, unveiling a bronze plaque, and having tea



Princess Anne at the Colorado chip factory.

with Inmos employees in the cafeteria. That, reader, is how she spent a

day while the telegram of congratulation to her sister-in-law remained unwritten.

A cuckoo in the technological nest

BRITISH TELECOM was acting more like a "cuckoo bird" than a "Buzzy bird" in its attitude towards competition, said a Conservative MP in the Commons. Like the cuckoo it was "seeking to eject fledglings from where it chooses to regard as its own exclusive nest".

British Telecom has lost its monopoly on certain products, including modems, and the MP feared it was preventing other companies moving in on its once exclusive patch.

Had some Opposition MP been sufficiently sharp, he could have used the cuckoo analogy to deliver a timely riposte. The cuckoo lays her eggs in nests of other birds to keep warm. But British Telecom, in being deprived of its monopoly, is having its eggs confiscated and reared by other birds against its will.

And at least a cuckoo hatches from a cuckoo egg, no matter what bird keeps it warm.

Hardly surprising then that news of Able's country retreat came not from the UK office, but from California.

"The building was chosen partly for quaintness and location, but primarily for size," enthuses a US executive.

One spectator likened the sprint finish to a Sun reporter making a bolt for El Vano in a thunderstorm.

Those who have observed such a phenomenon will know that the comparison is especially apt.

Chad

A licence to spend?

"THE issuing of licences by the Swansea computer centre costs two and a half times as much per vehicle on the road as did the manual system it replaced — and that figure takes full account of inflation." So says Peter Davison who has helped compile a report urging that the Driver and Vehicle Licensing Centre's computer be scrapped.

However, it seems as if the government needs no such urging. If recent evidence is to be taken into account, the DVLC is already in the process of returning to manual operation by Post Office clerks.

This will come as a relief to those who have suffered from DVLC's incompetence.

But let us remind ourselves that the computer is as often a scapegoat as a villain in government departments.

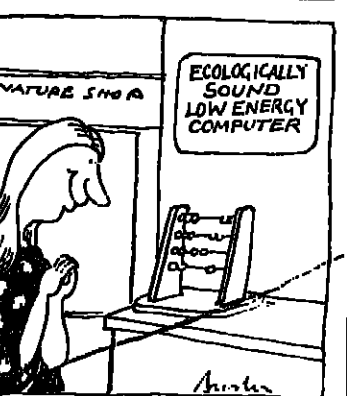
This sporting life

MY warmest congratulations to the many Computasters who took part in another round of fun and freak activity in the latest event sponsored by Computer Weekly.

Modesty precluded athletic Chad from demonstrating his prowess at the dribble, but few present are ever likely to forget how, after lulling the field to sleep in the 400 metres, he sprung like a cheetah to bury his prey in the graveyard of history.

One spectator likened the sprint finish to a Sun reporter making a bolt for El Vano in a thunderstorm.

Those who have observed such a phenomenon will know that the comparison is especially apt.



Counting on the abacus

NEW technology meets old as China begins counting its vast population. Speculation now has it at 1,000 million.

The abacus used for countless Chinese population surveys, will stand alongside computers for the counting.

A staggering six million census officers will take part in the hope of avoiding what Chairman Mao Tse-tung, man-made God, once described as ghost people.

All their own work

WHERE would you go to find out how many micros are installed in this country?

With the Financial Times' great interest in things computational you'd perhaps have thought that its Information Service might be a good place to start.

But when a large micro dealer turned to the Information Service to compare findings from its own researches with other available information, all the FT service turned up was one Press release — from the company itself.

Alan Simpson

FOCUS

Wanted — a guide to good buys

THERE has probably never been a period in computing history when the potential user was so much in need of care, attention and advice. But while the demand for advice has increased, the supply has fallen to a point where it is nearly invisible.

Although users continue to be well informed on many issues, their daily problems are not adequately in touch with the matters — positive "how to" recommendations are about as scarce as fully satisfied users.

It is not unknown for DP professionals to be asked — possibly over drinks at the local pub — or during the course of a meal with friends — for professional advice on a problem. Giving such instant advice is a far easier task than the more formal feasibility study.

Within the last two weeks, focus has been asked to recommend, during a rare sunbathing session on Deal beach, a suitable make which would serve the needs of a hotel reservation system. As an equally unfamiliar venue — House of Commons — a micro which would serve the needs of a 12-year-old son, in home time, recommendations were cited for an agricultural bureau and a private investment club.

Advice ranges from specialist micro publications to professional magazines, to office and company managers to a comprehensive range of books and guides on the subject.

However, it does not take long to realise that all these books and articles lack one vital factor — a practical recommendation. The published works are stuck in such evaluation matters as "what computers do and how they do it" and how they will change the nature of the office, home and factory of the future.

While the books present a wide range of data on recruitment, training and managing computer systems, they are notably short on hard facts, recommendations, and, in the case of the publishers' data, that of timescales. Giving the publishing thumbs-up to an Apple Pet, for example, could be dated by the time the article appeared.

In any case, the computer professional's motorist or housewife equipment colleagues, is relevant to propose best or worst buys. Comparisons are usually limited to machine ranges rather than competing equipment. That a central micro has a tendency to overheat is left switched on for a lengthy period of time, is subject to recent interference from a passing car within 1,000 feet is not compatible with any UK technology and is a master for user discovery.

The challenge of computing includes a considerable amount of data and find out yourself.

Meanwhile, many advertisements only serve to add confusion or bafflement to potential users. The specialist micro advert often assumes their readers have an electronics degree while the more traditional vendors believe it is more beneficial to sell general conservation and macro computers than machine application potential. Exhibitions and conferences similarly offer the potential for healthy rations of confusion.

1984 and all that . . .

THIS week's example of the strange things people say about computers was sent in by J. B. Lupton of Derby, who wins £5. Operated and supervised by one man, the complete system has its programs stored on floppy disc with paper tape backup. The machines are programmed in English.

Production Engineer

Computer Weekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

Thursday, July 8, 1982

How to react to the Japanese

THE biggest shakeout the computer industry has yet seen is coming as a direct result of Japanese proposals for a fifth generation computer project. This week in London the debate on the project will reach a new high in intensity as UK software house SPL International hosts a three-day conference which was set up in the shadow of the Japanese challenge (see story page 3).

The effect Japanese proposals have had on the computer industry's thinkers is well summarised by Stanford University's Edward Feigenbaum, one of the speakers at the conference: "The system outlined is discontinuous with traditional thinking but completely continuous with the vision of computer scientists over the years for a truly intelligent system. The project aims to build the artificial intelligence machine that we have all been waiting for".

This comment conveys the enthusiasm felt by many. It also makes the point that the fifth generation produced by the Japanese is simply a restatement of objectives pursued by many Western scientists for many years.

That point is important, and it needs to be stressed that the fifth generation is just a concept, not a reality. Japan's Ministry of International Trade and Industry has skillfully given an impression of something concrete by laying down a detailed timescale, and has ensured that the West takes notice by inviting us to collaborate in the development.

□ □ □ □

But when all is said and done, MITI has not done or even said anything new. A sober and accurate assessment of the report's significance is provided by another speaker, Newcastle University's Phil Treleven: "Japan has pinpointed the front runners in special areas of research".

The widely held belief that Japan will inevitably in time dominate the computer market as it has in the past come to dominate other industries, such as motor-cycles and radios, is very questionable. For one thing, it is doubtful whether the "vision of computer scientists over the years" can be translated into reality simply by the formulation of a plan, even over a 10-year timescale.

It is worth reminding ourselves that the Japanese have contributed precisely nothing to the architecture of the fourth generation. The mainframes produced by their computer companies are carbon copies of American systems. All they have done is to apply their undoubted engineering skills to the task of producing more cost-effective implementations of Western ideas and concepts.

□ □ □ □

If Japan is merely to retain its present position in the computer industry (as opposed to the components business), that situation cannot be allowed to continue. NEC's Michiyuki Venohara puts it: "We can no longer rely on the US and Europe to perform the advanced research which we will need in the future".

That is the real motivation behind the production of Japan's fifth generation report. In order to avoid losing out when the West eventually produces its fifth generation (and the Japanese are well aware that all the concepts contained in their report are currently being worked on in Western laboratories), MITI has made a pre-emptive strike by formulating its own view and, most significantly, inviting the West to collaborate. That way they can be sure they won't be left behind.

And it is in that context that any response to the Japanese initiative should be formulated. The British government has, sensibly, taken a cautious view: after doing nothing for some months, it set up a study group in April, to examine the scope for collaborative research projects.

Industry should adopt a similar stance. There is no need to rush panicking into action to offset the imminent disaster of Japanese domination of the computer industry, because it's not going to happen. We should certainly consider collaboration when we can see something in it for us (as for example ICL has done), but we should never forget that we've actually got quite a lot to offer them.

1984 and all that . . .

THIS week's example of the strange things people say about computers was sent in by J. B. Lupton of Derby, who wins £5. Operated and supervised by one man, the complete system has its programs stored on floppy disc with paper tape backup. The machines are programmed in English.

LETTERS

Jobs for next generation IBM three-day briefing

I FOUND your feature on Office Automation contained more sound common sense than I have read on the subject for many months. In particular Philip Conford is correct in his assessment of Information Technology Year.

What so many organisations, including the government really need is the skill to identify unambiguously market requirements, whether commercial or social gain, the clarity of thought to select from the vast amount of information already held, the willingness to make, and stick to, decisions which may be unpopular, and the honesty to review critically at predetermined points the effectiveness of their decision-making ability.

My personal view is that for the

good of the next generation our national priority should be to re-evaluate work distribution between the haves and have-nots.

Our present educational system — undervirted of course by the taxpayers, private and corporate — should not be influenced too greatly by the prophets of "information revolution". As a country we cannot afford to dissipate our efforts on techniques which at best merely pass on social costs to those sectors of the economy less and less able to support them.

It is no argument nowadays to say "But we haven't made employees redundant," what we need is reward for the creation of new jobs for the next generation.

D. MORRIS

Shenfield, Essex.

AN article (CW, June 10) alleges that IBM recently pre-announced a small business computer to "a select group of data processing managers in the United States who are large scale users" of IBM's System 34.

Had you taken the time to check the facts with us prior to publishing the story, you would have found out the following:

1. Our practice remains one of not commenting or speculating on future product announcements;
2. We have no record of a meeting such as you describe. A three-day briefing for data services companies in Florida during the first week of June included a general session on IBM's small systems directions and an elective session on System 34 and System 38. At no time, however, were specific future products described.

Will you please correct the misleading impression that your highly speculative article may have given your readers by publishing this letter as soon as possible?

M D STOTT

External Communications Manager

IBM UK

Why help these regimes?

I AM becoming increasingly concerned at the activities of the recently formed "UK Council for Computing Development" whose aims include advising Third World countries on the implementation of sophisticated computing and data processing techniques. They are also advertising and handling the recruitment of computing experts and consultants for projects in those countries. Many of these projects apparently are for analysing national census data for "various government departments".

What concerns me in particular is that many of these countries to which the Council is sending advisors have an appalling record for the lack of human rights. For example, a recent request for help came from Turkey which is at present well known to be steadily killing, torturing and imprisoning ordinary people opposing the ruling junta. And one recently advertised request for help has come from Libya, and the reputation of that country's leader is worldwide.

In the UK we are well aware of the issues concerning the "freedom and misuse of data" held in vast computer databanks and the consequences of this data being wrong or used for unpleasant reasons. However thanks to our (approximately) democratic government at least we still retain most of our human rights if such data is misused. But what of the Third World countries where human rights are not enjoyed by anyone, especially those opposed to the politics of their government?

That is why I am concerned. Should we be helping those countries to further their aims of suppressing even further human rights?

NAME AND ADDRESS WITHHELD BY REQUEST

Operating system omission

I MUST bring to your attention a serious omission (CW, June 10) in your article, A Guide to DEC Operating Systems. Under the section Independent Operating Systems, there is no mention of the most important and best of such systems, Unix (+) or its derivatives.

I know from other articles in your journal that you are aware of the existence of Unix (+) therefore why not include it for Unix (+) is probably used far more than the rest of the independently supplied systems

IAN R. PERRY

Laboratoire d'Etudes et de Recherches Synthelabo, Paris.

Meeting sick pay rules

AS one of the micro software companies referred to in the Software File payroll discussion referred to by Cliff Dillaway (CW, June 3), we agree wholeheartedly.

A good guideline to a supplier's capability in meeting the forthcoming sick pay regulations, however, will be provided by the existing facilities of its payroll system. If you find a system is not capable of easy user-adjustment for statutory changes in tax and NI, simply avoid it and use it as a clue to that supplier's overall software capability.

The same advice will certainly mark out the men from the (cow)boys.

DAVID JARMAN

Managing director

Jarman Systems, St Albans.

Cash for courses

YOU reported (CW June 17) about the way in which computer departments in universities and polytechnics were being particularly badly hit by public spending cuts.

Within the polytechnics subjects are classified into laboratory and non-laboratory for purposes of resource allocation.

Laboratory subjects are given more money for equipment and for staffing. Traditionally computing has been classed with the other sciences but this has now been changed, and it has been grouped with mathematics.

Apparently the computer and microprocessor laboratories in which my students work are a figment of my imagination!

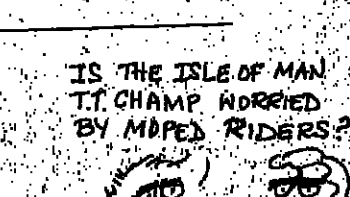
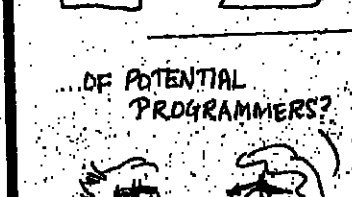
Mrs L. P. ANTILL

Polytechnic of the South Bank, London SE1.

L'ware File

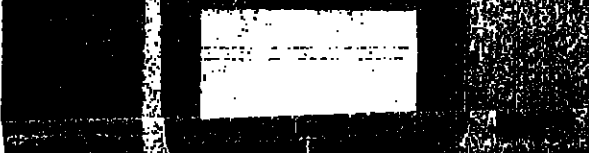
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A BRILLIANT MINI THAT'S EASILY MANIPULATED.

The remarkable new Olivetti M20 personal computer.

Please forgive our boasting but the new Olivetti M20 really does make the current crop of computers look like toys for adults.

It's simply the most advanced personal computer in Britain.

The 16-bit central processing unit and 'bus' allow larger more complex programs to be run on larger amounts of data and at far greater speed.

It has two 5¼" mini floppy disk units with a capacity of 320k bytes each that are integral to the system.

(These can be further extended with the addition of a hard disk.)

And it has a minimum internal capacity of 128K bytes.

The result is an extremely powerful computer with interfacing capabilities that allow it to communicate with a wide range of peripherals.

That's proof that it's brainy, but it's also beautiful.

The visual brilliance and clarity of the VDU can be controlled as its position can be swivelled and tilted to suit the operator.

And as well as handling up to two thousand characters, the screen can produce a variety of complex, high resolution graphics.

Naturally, lines, circles, ellipses, bar charts and pie charts are a cinch.

But the screen can actually split itself into sixteen independent windows. It's all clever stuff but its language is simple.

It uses Microsoft® Basic which has been developed to a new level of professionalism. In fact, the advanced PCOS operating system combined with its programming language make the M20 easier to use than a typewriter.

But if you do manage to get lost there's a 'Help' function to guide you.

The M20 also has the reassuring ability to run through its circuits every morning and if any are faulty it'll tell you. So Olivetti's national can work even faster.

Send off the coupon and find out why the M20 is simply brilliant.

And brilliantly simple.

© Microsoft Basic is a registered trademark of Microsoft Inc.

For more information on the M20 Personal Computer please send this coupon to Valerie Belfer.
British Olivetti Ltd., Olivetti House, PO Box 89, 86/88 Upper Richmond Road, London SW15 2UR.

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DEI enquiries welcome

olivetti

The reason for the confusion over the new standards is that Ansi is taking a very long time making

The complaints are founded on fears that existing Cobol programs will have to be rewritten where the new standard is implemented. Brown claims these fears are only partly justified. In practice, he says, old compilers continue to be

The suggestion is that if Ansi cannot come to a decision, some-

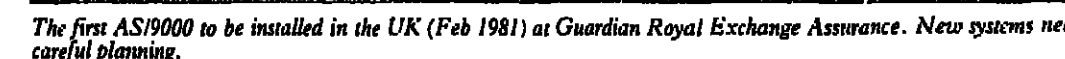
One recommended change that I for one can see causing problems when large existing commercial Cobol programs are carried onto the new standard concerns file up-

The change concerns the timing of the decision of which record is to be read next during a file update. Normally the change will make no difference. But suppose that while updating an indexed sequential file, the program writes a record with a sort key just a little greater than the one just read. The next record to be read would be the one sequentially following the one last read. With the new standard, it would be the one just written, if its key is lower than the one due to be read next, but higher than the one last read.

Confusing, is it not? Hardly surprising, then, that there have been reservations about the new standard.

Having planned the various elements of the change, it is necessary to monitor progress and coordinate the efforts of the individuals concerned. Depending on

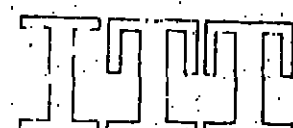
They can vary from the almost expedient of using an earlier version of a program, if an amendment fails, to having a team



for tuning requirements. A high volume of program or system changes may indicate that design standards are inadequate. Depending on the character of the installation a number of conclusions may be drawn by monitoring the effects and nature of the change.

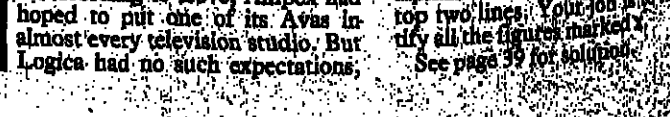
● The author is a computer consultant specialising in operations.

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hoped to put one of its Avas in almost every television studio. But Logica had no such expectations; top two lines. You can verify all the figures marked x. See page 39 for solution.



See page 39 for solution.

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Successful BT product may ruin the companies it serves

Sea freight forwarders fear ACP80 offshoot could squeeze them out of business, says Anthea Ballam

IT would be a sad twist of fate if one of British Telecom's most outstanding success stories — the tale of ACP80 (air cargo processing in the 80s) — evolved into an unhappy and bloody political argument between supplier and user.

Already a deep-felt bitterness is developing from within the freight forwarding industry, and fears are rising that Direct Trader Input (DTI), which has grown out of ACP80, could hit hard at the maritime freight industry, causing thousands of redundancies and threatening the existence of the industry itself.

How has this situation come about, and what can be done to stop the rot?

It all began in 1971 when Laces, London Airport's cargo processing system, was introduced for handling documentation and cargo administration. The system was widely acclaimed by both air freight concerns and overseas airport authorities, and when its successor ACP80 appeared in December of last year, it was accepted that British Telecom, via the National Data Processing Service (NDPS) had become the world leader in such matters.

ACP80 marked a significant number of firsts. It was the only cargo processing facility to enable private companies to link their own systems into a public service, the only facility to handle both imports and exports and the first to have the potential to handle both air and sea freight.

This may have been the first mistake for, as several freight forwarding concerns have explained, the differences between air and sea freight operations are enormous. But in its own right ACP80 remains a great achievement for British Telecom. It is the developments that have grown out of the system that pose the threat.

ACP80 is run on ICL 2966 mainframe systems (a configuration that is shortly due for upgrade). The existing tasks for the NDPS system include the handling of import and export inventory control documentation for some 35 airports and others as well as similar services through communication links to six top airline mainframe facilities.

Export, complement, re-export

to HM Customs and Excise, and the production of trade statistics on goods, are also controlled.

In close association with this service (although it was contracted separately) is the Departmental Entry Processing System (DEPS) the latest data control facility run by HM Customs, intended to improve the flow of trade goods at the maritime ports.

The contract to handle DEPS was justifiably awarded to the NDPS on the basis of its proven success (with ACP80) and the system runs on a mainframe in tandem with the ACP80 system at the NDPS computer facility at Harmondsworth, near Heathrow.

At the beginning of May, DEPS became operational at Dover, Felixstowe, Folkestone, Harwich, Hull, Liverpool, London, Manchester, Southampton, Stratford, Tilbury and Manchester Airport. The enhanced service allows agents and importers to declare goods at ports where Customs officers enter details through video terminals to the Harmondsworth configuration.

Herding this important change was the introduction in April of a new form, C12 (a revised version of its predecessor C10) which has not been greeted with enthusiasm by the freight forwarders. The introduction of DEPS is seen as the first stage of yet another development, direct trader input (DTI) whereby freight forwarders will be able to input details of Customs entries automatically over dumb terminals linked up to the central mainframe facility at Harmondsworth.

The introduction of DTI to cut costs in processing HM Customs data entries has cast maritime freight forwarders into gloom and despondency, coupled with the fear that introduction of such a service could strike at the very heart of the industry.

The appearance of the C12 form has provided maritime freight forwarders with their first taste of DEPS, and they are not happy. John King, a manager at the Dover branch of the Bow Patmar freight forwarding group, expressed his early impressions of DEPS in no uncertain terms.

hours to deal with Customs clearance when we used the C10 form, and now clearance has gone up to nine or 10 hours. This affects us and our customers very adversely.

"Customs tell us that because the form is coloured blue and because the format is complex it takes a great deal longer to check it. In many cases the forms are presented incorrectly because they meet with no familiar standards; they do not include carbons, so we spend a great deal of time in just handling these forms and inserting carbons for duplication purposes.

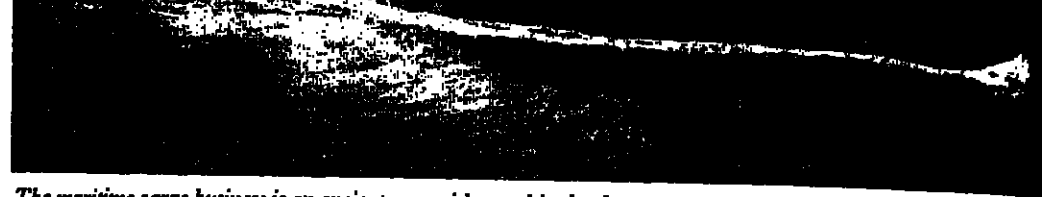
"Ultimately this must increase our costs in documentation handling. One has to type the information in black otherwise the form is rejected. The boxes are so small that you can imagine that when a Customs officer has been working a long seven- or eight-hour shift, he cannot possibly distinguish be-

The freight forwarders and their suppliers feel that they have been railroaded into a monopolistic situation whereby HM Customs can decide on what computer terminal or facility they may need, and who may subscribe to such a service, and continue in business, and who may not.

tween correct and incorrect information.

Another articulate critic of this early manifestation of DEPS is Peter Day, managing director of Impatex, a systems house specialising in the provision of micro-based computer systems for the freight industry. Day pointed out that C12 was a conspicuously poor piece of design that was not standard for any normal typewriter. Constant realignment was required in order to input the data correctly.

Day's greatest fear, however, is the introduction of direct trader input (DTI) which he sees as an ingenious method of making the freight forwarders pay for the privilege of paying Customs duty, as they will be "acting as unpaid cus-



The maritime cargo business is an ancient one, with a multitude of companies working from each port.

DTI, phase two of DEPS, are expected to involve an HM Customs recommended terminal that will be available (at a cost) to the maritime freight forwarders to access the central facility.

One freight forwarder expressed the belief that this could ostensibly put paid to the freight forwarders themselves. It will certainly squeeze out the many systems houses serving the industry. The Customs would decide the systems standard, and all other configurations would be incompatible with the DTI terminal.

Because the central facility will

may need, and who may subscribe to such a service, and continue in business, and who may not.

Day expresses the belief that mishandling of DEPS and subsequently DTI is historic, and springs from an inability to comprehend the radical differences between air cargo business methods and the maritime freight industry.

The air cargo companies, like the industry itself, are young. They are by necessity all local to both Heathrow and Gatwick, and making available centralised computer facilities, like the introduction of data processing systems to such early birds is a simple matter in terms of planning.

By comparison, the maritime cargo scene is a different one altogether. The concerns involved are often ancient organisations that seem to have existed almost as long as sea trade itself. In Dover alone it is estimated that there are some 250 freight forwarding concerns, varying from the larger concerns like Bow Patmar and Kuehne and Nagel down to Fred Bloggs, his assistant and his micro-cum-word-processor.

Peter Day is not alone in the belief that DTI is in reality Customs' answer to government pressure to offset costs in processing Customs entries onto the cargo companies themselves. DTI would certainly reduce the staff required to input data entry details to the central Harmondsworth computer facility.

So far, early efforts at DEPS have certainly proved unpopular and now would be an opportune moment to reconsider the other options available. Meanwhile, rumours are rife that Ballistowe has been the chosen venue for early experimental trials into DTI, but HM Customs is unwilling to comment on this or responses to DEPS and the new C12 entry document that has been received with such enthusiasm.

Understandably, the freight forwarders and their suppliers feel that they have been railroaded into a monopolistic situation whereby HM Customs can decide on what computer terminal or facility they

form of DTI is inevitable, but it should not be based exclusively on a centralised system. Because of the disseminated nature of the maritime freight industry he believes that some form of network structure is essential, with the freight forwarders able to input data at will with their own choice of hardware and only guideline protocols for communications access to the system.

In this way users would be free to invest in the data processing equipment of their choice, a fundamental freedom that should be open to any and every form of commercial enterprise. To dictate what terminal should be available for DTI is, he believes, a monopoly of the worst kind.

Commenting on the insecurity of the freight forwarders and their need to determine both standards and freedom in DP systems, John King of Bow Patmar cited an occasion in 1979 when a number of freight forwarding agents grouped together to buy a £20,000 Burroughs configuration. The system was designated to handle Customs entry documentation and other functions based on such forms production. With the introduction of DEPS and the new C12 requirements the system is now obsolete or must be radically re-designed.

The maritime freight forwarding industry is balanced on a cliff edge, awaiting news of DTI at whatever moment HM Customs may choose. As one executive explained, the industry is in great need of introducing automated systems to make it more efficient, and most understandably many companies want to invest in DP and WP now.

At the same time, nobody knows if DTI is going to be standardised, so nobody dares invest. It is even more curious to consider that this dangerous and worrying situation has all been born out of the unequivocal success of Laces and its new cousin, ACP80.

MINICOMPUTERS AND PERIPHERALS - 1

John Aczel begins our three-page feature with a look at trade figures for peripherals. Deficit will probably continue

Vigorous sales push abroad needed to right the balance

BRITISH sales of peripheral equipment in overseas markets are softening, and have dropped in value at the beginning of 1982. These conclusions emerge from the latest published Customs and Excise trade statistics which refer to January 1982.

There has been some delay in collecting the trade figures owing to computer problems experienced by the Customs and Excise department, so that the figures have not come out as quickly as usual. Nevertheless, the underlying trends are quite clear and indicate some weakness in deliveries in many key markets.

Undoubtedly British computer

firms are meeting strong competition in some markets and lower sales have been reported in certain European countries. In particular, deliveries to the Netherlands have declined by over 25% compared to the previous month, while those to Belgium were easier in this period. Sales to Switzerland and Spain were also down, but, in contrast, higher deliveries have been recorded to West Germany and Italy.

One encouraging feature, however, is that the British exports of computer peripheral equipment have been gaining ground in the Middle East and rising deliveries have been seen in that region during January. In particular, sales to Saudi Arabia were up by 8% and reached a new peak of £2.1 million.

It is interesting to look at the trends in exports by volume, as actual numbers exported have gone up during January. Whereas the total number of peripheral units sold abroad amounted to 24,900 in December, this figure went up to over 26,700 in the following month.

Imports of peripheral equipment have remained at a high level, even though they were slightly easier during the early part of 1982. In January, total deliveries from abroad amounted to £43.5 million, which was a decline of 8% compared with the previous month. In terms of numbers, there has also been a drop in imports, though the fall has not been as significant as in value terms. Thus 55,900 peripheral units were im-

ported as against just over 58,400 in the previous month.

These figures reveal that the US maintained its dominance in the peripheral sector, though its sales in January were lower. American deliveries accounted for nearly 60% of total imports, and other countries have made further inroads into the British market. This was particularly the case for France and West Germany, while sales by Italy were well maintained in this period.

On the whole, Britain will continue to have a major deficit in the peripheral sector; the latest situation indicates that imports have exceeded exports by £13 million, and this trend is unlikely to change, at least over the coming few months. Unless sales abroad are built up more vigorously, this imbalance will continue, and may even increase significantly in the course of 1982.

John Aczel is a consultant.

	January 1982 £000	December 1981 £000	Sept-Dec 1981 £000
Belgium-Luxembourg	889	1,278	5,596
France	5,337	5,365	24,694
Germany (West)	6,167	5,633	30,387
Italy	3,346	2,727	15,681
Netherlands	976	1,337	6,285
Norway	775	310	1,392
Saudi Arabia	2,144	1,978	3,562
South Africa	1,089	1,487	5,178
Spain	864	1,422	4,786
Sweden	1,382	1,345	6,272
Switzerland	1,493	1,830	6,118
US	1,028	1,493	7,001

Figure 1. British exports of peripheral equipment (by main markets).

	January 1982 £000	December 1981 £000	Sept-Dec 1981 £000
Belgium-Luxembourg	332	792	3,287
Canada	490	376	2,290
Denmark	403	113	1,199
France	2,084	1,915	9,071
Germany (West)	3,842	3,531	13,396
Ireland	778	1,066	4,614
Italy	3,303	3,381	16,030
Japan	1,082	1,881	6,862
Netherlands	2,455	2,496	6,660
Spain	568	642	7,059
Sweden	919	1,413	5,763
US	5,992	26,812	112,099

Figure 2. British imports of peripheral equipment (by main suppliers).

	January 1982 £000	December 1981 £000	Sept-Dec 1981 £000
Peripheral units			
Disc storage units	3,546	3,734	17,123
Magnetic tape storage units	294	1,085	3,446
Other storage units	369	184	1,331
Printers	2,342	3,213	11,581
Readers and punches	381	725	4,036
VDUs	13,817	11,571	56,752
Other terminals and consoles	1,198	1,106	4,355
Other peripheral units	8,395	10,625	42,344
Offline data processing equipment			
Punches, verifiers and calculators	20	10	57
Other equipment	285	347	1,985

Figure 3. British exports of computer equipment by product groups (by value).

	January 1982 No.	December 1981 No.	Sept-Dec 1981 No.
Peripheral units			
Disc storage units	1,758	1,432	7,053
Magnetic tape storage units	375	841	1,804
Other storage units	212	54	447
Printers	3,422	2,191	7,689
Readers and punches	91	176	873
VDUs	12,580	10,578	54,197
Other terminals and consoles	309	271	1,811
Other peripheral units	7,071	9,397	36,681
Offline data processing equipment			
Punches, verifiers and calculators	9	15	326
Other equipment	258	454	5,433

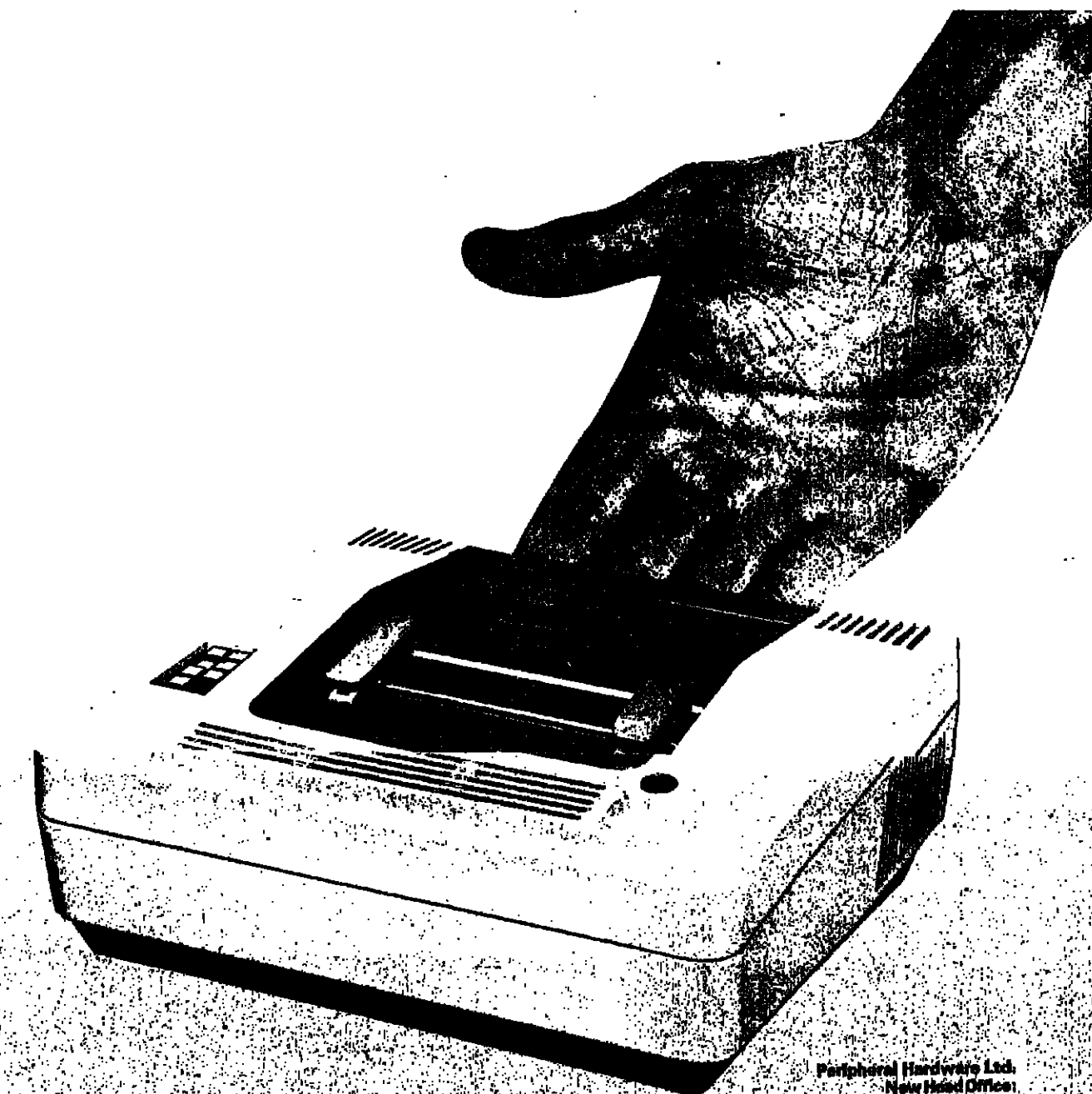
Figure 4. British exports of computer equipment by product groups (by volume).

	January 1982 £000	December 1981 £000	Sept-Dec 1981 £000
Peripheral units			
Disc storage units	9,331	10,039	39,729
Magnetic tape storage units	1,464	2,229	12,379
Other storage units	1,352	780	3,668
Printers	7,666	10,356	39,174
Readers and punches	230	276	1,186
VDUs	4,885	5,510	21,555
Other terminals and consoles	2,600	2,363	11,867
Other peripheral units	16,059	15,793	72,220
Offline data processing equipment			
Punches, verifiers and calculators	46	24	317
Other equipment	1,038	1,255	4,586

Figure 5. British imports of computer equipment by product groups (by value).

	January 1982 No.	December 1981 No.	Sept-Dec 1981 No.
Peripheral units			
Disc storage units	9,375	12,721	38,017
Magnetic tape storage units	1,402	479	11,925
Other storage units	714	1,869	3,280
Printers	12,725	14,022	57,618
Readers and punches	578	419	1,971
VDUs	8,857	9,743	33,391
Other terminals and consoles	3,147	2,407	13,465
Other peripheral units	19,087	16,719	83,367
Offline data processing equipment			
Punches, verifiers and calculators	48	67	841
Other equipment	3,088	2,320	8,087

Figure 6. British imports of computer equipment by product groups (by volume).



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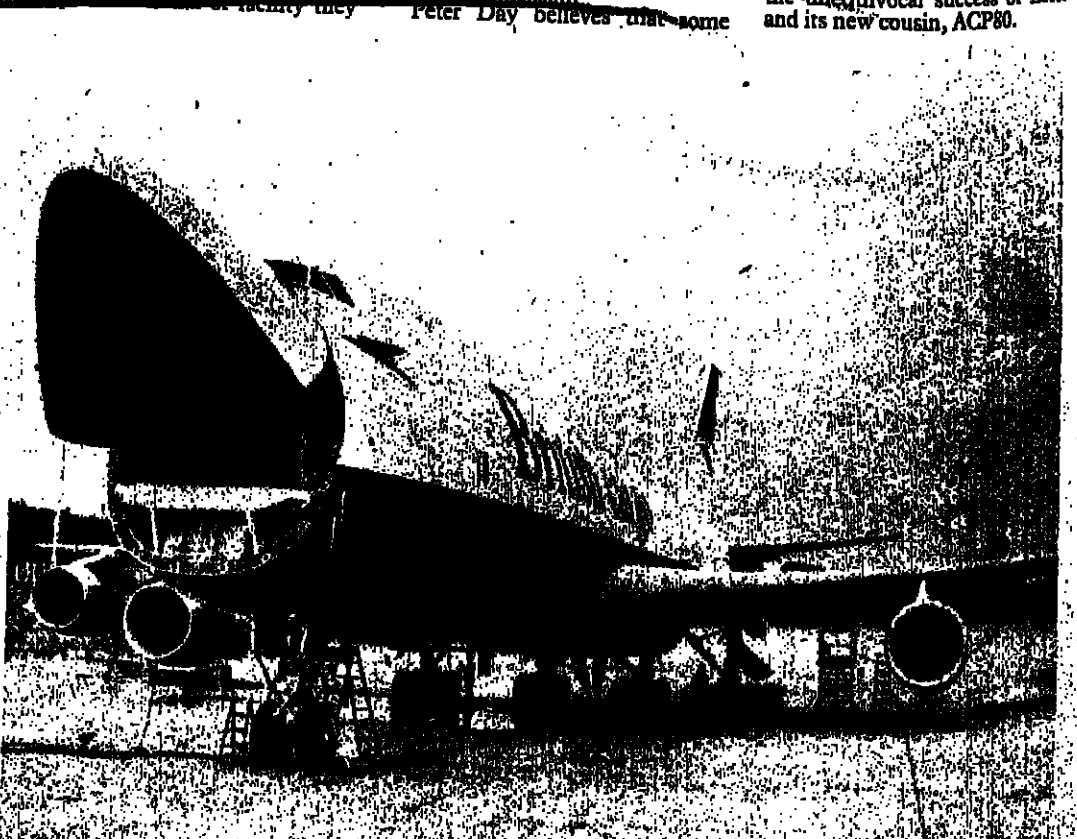
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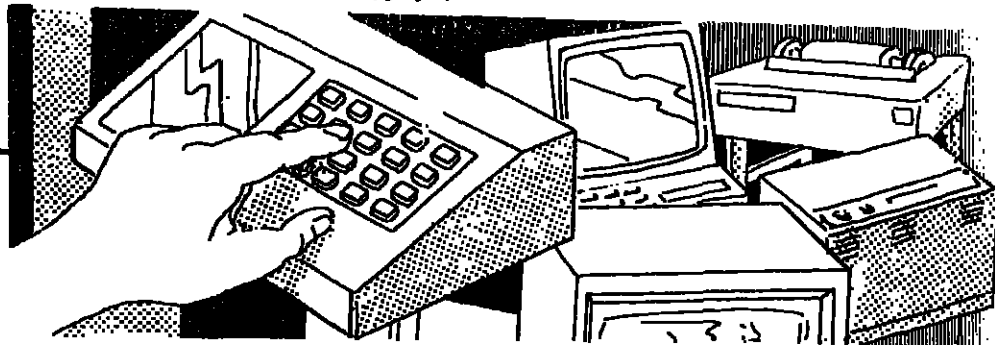
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DEPS became operational at Dover in May.

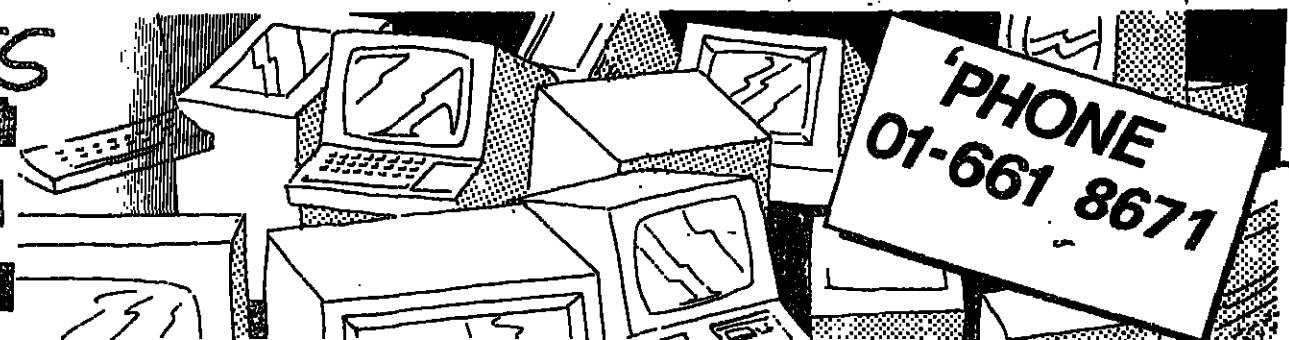


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How to be fail-safe without duplicating the system

Waiting for maintenance calls means loss of business...
Tony Smith gives some recipes for resilience

MINICOMPUTER suppliers, pioneers in the development of low cost interactive transaction processing systems for small and medium-sized companies' general computing requirements, have a strong foothold in distributed processing.

Both markets require a high degree of fail-safe operation for the user. The more he depends on his terminal-based computer system - to process, for example, his sales ledger - the more vital it becomes for his system to be operational during the working day. Waiting for maintenance calls means loss of business.

Minicomputer suppliers are now thinking in terms of offering some form of resilient processing capability that avoids the heavy expense of complete dual processing, previously the only method on the market but way beyond the budget of most companies.

The new approach is to add a series of hardware and software techniques to existing configurations that will enable any organisation to add safety to its interactive computer system - only where it is required and where it can be cost justified.

Nowadays the typical minicomputer user is not necessarily a small company, largely because the power packed into these systems, particularly in interactive networking environments where terminal control is often managed by specialised microprocessor-based subsystems, compares favourably with many mainframes.

Many companies have developed online, interactive databases with terminals operating in real time. Such systems are transaction based, so that as orders are received they are put on to the ledger, stock is updated, invoices are output, picking orders are listed and warehouse bills are printed out.

Hence there is a new and wider need for non-stop resilience in the commercial and minicomputer environment, because in all computer systems, however reliable, both hardware and software occasionally fail. Resilience cannot change this basic truth: it gives a system the ability to cope with failure and still keep on running.

Traditionally, resilient non-stop computing has been associated with defence systems, oil pipelines, banking, and has carried a heavy price tag. Non-stop computing has been provided by specialised configurations each specifically engineered for the particular job at hand; or by duplicate systems standing idle until needed. Most commercial computer applications could not normally justify such expense on under-utilised capital equipment.

For the small business systems user with just a few terminals linking key areas of his business, some form of fast recovery mechanism protecting his database from hardware or software failure is very attractive. Any "incident" is reduced to just a hiccup in the availability of his data.

However, it is unlikely that he can justify expenditure on duplicating any aspect of his computer system. But later, as his dependence on the computer grows, that decision might change. Ideally, he would build in just enough resilience to cope with the most likely causes of failure, such as an electrical failure or operator input error.

A method of adding simply a fast recovery option, which holds information either on disc, or on optional memory boards, with on-board battery backup, and which could be added to standard hardware and programmed to offer fast recovery to standard system software had to be provided.

For the most part its addition means the purchase of no extra discs or main memory. In case of hardware failure, as in a power cut, the recovery of information is well protected and is effected when the system is re-started.

In the case of software failure, a fast recovery option will check-point the progress of applications level software so that following a program failure, the database is quickly returned to a consistent state.

Integral to this approach is the need to protect the database against corruption and against inconsistencies that might arise from incomplete update sequences. Database operations frequently involve many separate but related updates. For consistency, these updates must be applied as a complete set.

The fast recovery option suggested here would ensure rapid and automatic recovery to a consistent state - even when a hardware or software failure comes in the middle of update processing.

Following a checkpoint call it is important for a database system to maintain "before log" copies of all records subsequently updated. A database management system will continuously monitor access to the database and provide the facilities for multi-stream updating. This resolves contention and takes fast recovery action in the event of user program failure.

Data can be protected against contention by locking both at file and record level. Programs accessing locked records will be queued until the lock is released. If a program fails while it is holding locked records, the database system will automatically release the locks as part of its fast recovery mechanism.

Such a link, in normal use, can provide important performance benefits as well. Because the traffic is usually low-volume, each system achieves a high percentage of its full work potential.

Most minicomputer manufacturers offer the user some form of transaction processing package. These bring to the user the benefits of online transaction processing without the need for very specialised programming skills. Applications are programmed in Cobol, with the transaction processor providing VDU handling and real time operations.

To support resilience, the transaction processing software must have a particular architecture. The transaction processor separates foreground VDU handling from middle ground file updating. Between the two stages is the transaction log file, held on disc and containing completed transactions awaiting middle ground processing.

In a dual processor environment, each system runs standard transaction processing software with its own foreground, middle ground and log file with the processor link used for communication and co-ordination between the two systems. Both transaction log files are held on shared disc drives, available to both transaction processing systems.

Normally, transactions are fully processed by the system controlling the VDUs from which the transaction originated. In the alternative mode, one system may be directed to process, in the middle ground, transactions arising from the foreground of both systems.

The transaction processor in the middle ground in the remaining system now takes over processing of transactions in both log files. This involves completing any middle ground processing in progress at the time of failure. VDUs connected to the failed system may be switched to the remaining system.

After re-identifying himself to the system, each VDU user is informed of the last transaction successfully completed - even if he is now using a different VDU.

This approach of graceful resilience is a new concept. It allows a data processing manager to drive up a hierarchy of his own resilience requirements. For every application he should assess the potential frequency of failure, the potential cost, and the ease and speed of recovery. He can now apply resilience, only where and when the application demands it, his company can afford it and the cost can be justified in straight commercial terms.

While several key-to-disc or diskette systems have been on the market, the concept is probably best explained by the name it is given by central government, PCK: processor controlled keying equipment. By sharing the capabilities of the processor and associated peripherals (eg disc, tape, printer, etc) the overall cost per terminal was kept to a minimum. This was particularly so on those

systems capable of supporting 32 or more terminals.

The largest users of key-to-disc are generally in central government, nationalised industries, insurance, credit card and mail order companies, ie those with large centralised computer facilities and a data preparation requirement that cannot be cost effectively entered directly into the mainframe with online terminals at source, or by some other means such as OCR.

These centralised key-to-disc systems are staffed by specialised management and operations with equipment that continues to be developed to provide more cost effective keyboard entry media.

In many cases, key-to-disc systems have shared the same processor source and the same overall configuration as general minicomputer business systems, but one major distinction was always apparent: key-to-disc was designed to collect, validate, store and subsequently transfer, data entered at extremely high speed and in high volume by multiple terminal operators. High-speed terminal interfaces and other associated controls and other associated controls were necessary, as well as very specialised and specific software facilities. In the mid-Seventies such facilities were very different from those provided by minicomputer systems.

Over the last few years, however, a positive new approach to data preparation has evolved, which indicates the trends for the Eighties.

"Integration" and "diversification" are the two most descriptive words for key-to-disc evolution over the last two years. The main developments will be in these areas.

Communications, particularly interactive communications, within the framework of the key-to-disc system, have expanded the

application areas, provided a multi-use terminal, and possibly even stemmed the tide of data entry via specific, online terminal systems, for example 3270 and 7502 emulation.

File handling capabilities have further extended the front-end validation capabilities (available on key-to-disc almost since its introduction) and further reduced the requirements for complex input routines being developed on the mainframe. They have also substantially lowered the costs and mainframe programming responsibilities for changes dictated by its users.

Extensions to the processor controlling functions have included certain application processing functions by the introduction of user oriented programming languages, for example Cobol and Basic.

The use of alternative input devices such as OCR, handprint recognition terminals, point of sale devices, etc, have further decreased manpower costs within the DP department, but under the control of key-to-disc, have provided and ensured that a single co-ordinated stream of data to the mainframe has been maintained.

Facilities have been provided which enable users' data preparation requirements to be met by the use of their own terminals and which enable control of applications to rely less and less on centralised system level specialists.

Reports on future trends still indicate that the data entry market will remain essentially keyboard oriented. Key-to-disc as previously defined, however, will be supplemented in manpower terms, and possibly exceeded in hardware purchasing terms, by a closer integration with OCR equipment.

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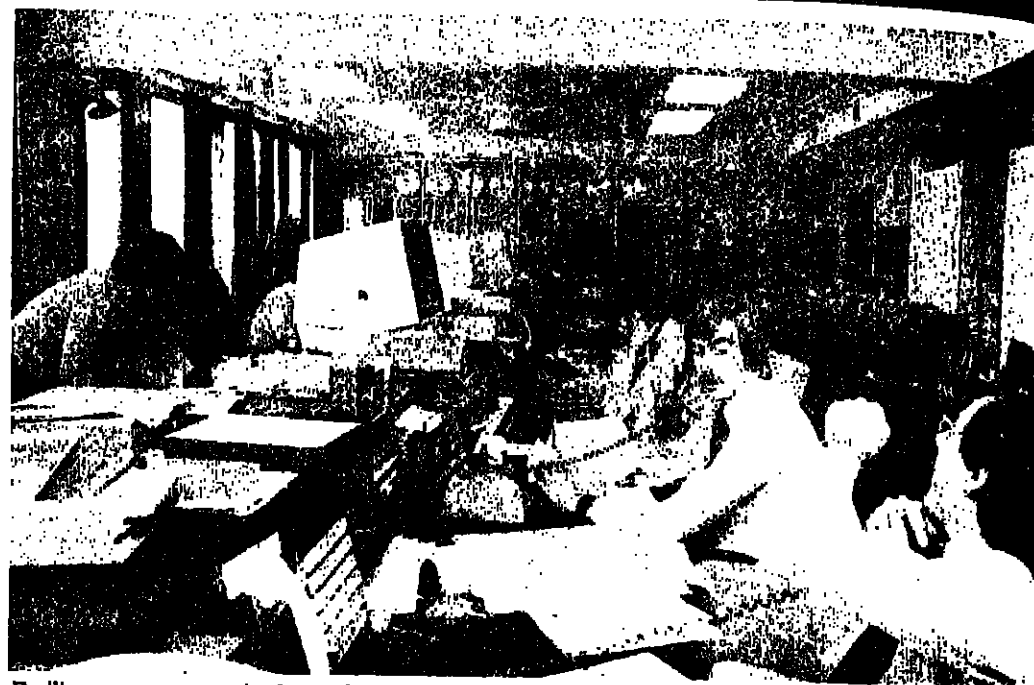
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For the smaller user there will be similarly significant but different changes in key-to-disc, particularly in the area of diversification of usage. This will almost certainly lead to substantial hardware changes with less dependence on centralised controllers and storage.

For applications still needing final central processing there will be a central control requirement with less emphasis on size of hardware (as has been the case with large key-to-disc installations) and more emphasis on network control and communications interfaces to a variety of mainframes.

A continuing trend will be towards a personal workstation approach. Activities will be controlled by the application experts at source and these will be extended well beyond data entry and the associated functions outlined above.

Software and hardware developments at a local terminal level will almost certainly include graphics, tables, word processing, viewdata and a variety of program



Resilient non-stop computing has traditionally been associated with banking

is, of course, the traditional approach to "non-stop" computing. In full resilient systems, two otherwise independent computer systems can be linked to act together as an integrated dual system. Each has full online update access, communicating with, and checking its partner through the link. Thus high throughput and resilience are achieved.

Each has its own instruction processor, store, disc controllers and input/output processors. The disc drives are dual-port units, connected directly to disc controllers on both systems.

Each system runs under control of its own operating system, within which it runs its own copy of the database software.

Using the link, the database software extends its responsibilities for database integrity. The link must have a monitoring function to test and report on both systems. Following the total failure of one system, the database software in the other can take fast recovery action. The database is returned to the consistent state of the previous checkpoint, and any record locks held by the failed system are released.

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Falling costs make key-to-disc an important UK market

DURING the last decade, in parallel with other computing equipment, the overall cost of key-to-disc has been reduced by some 50%. Compared with the increase in salaries of data preparation staff, smaller and smaller configurations can be cost justified, which has made it an important market for several UK companies.

Not until the late Sixties did data processing management begin to evaluate equipment which would materially reduce the costs of data preparation. The equipment initially took the form of magnetic tape encoders, but these in time were quickly overtaken by a rush of key-to-disc systems offered by minicomputer manufacturers.

Manufacturers were quick to capitalise on the fact that data preparation probably absorbed up to 25% of a total DP budget; and was the most labour intensive section within the DP department with probably the highest potential for human error; and traditionally had an unfavourable productivity standard.

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Data preparation probably absorbs 25% of the total data processing budget, as in this local government installation.

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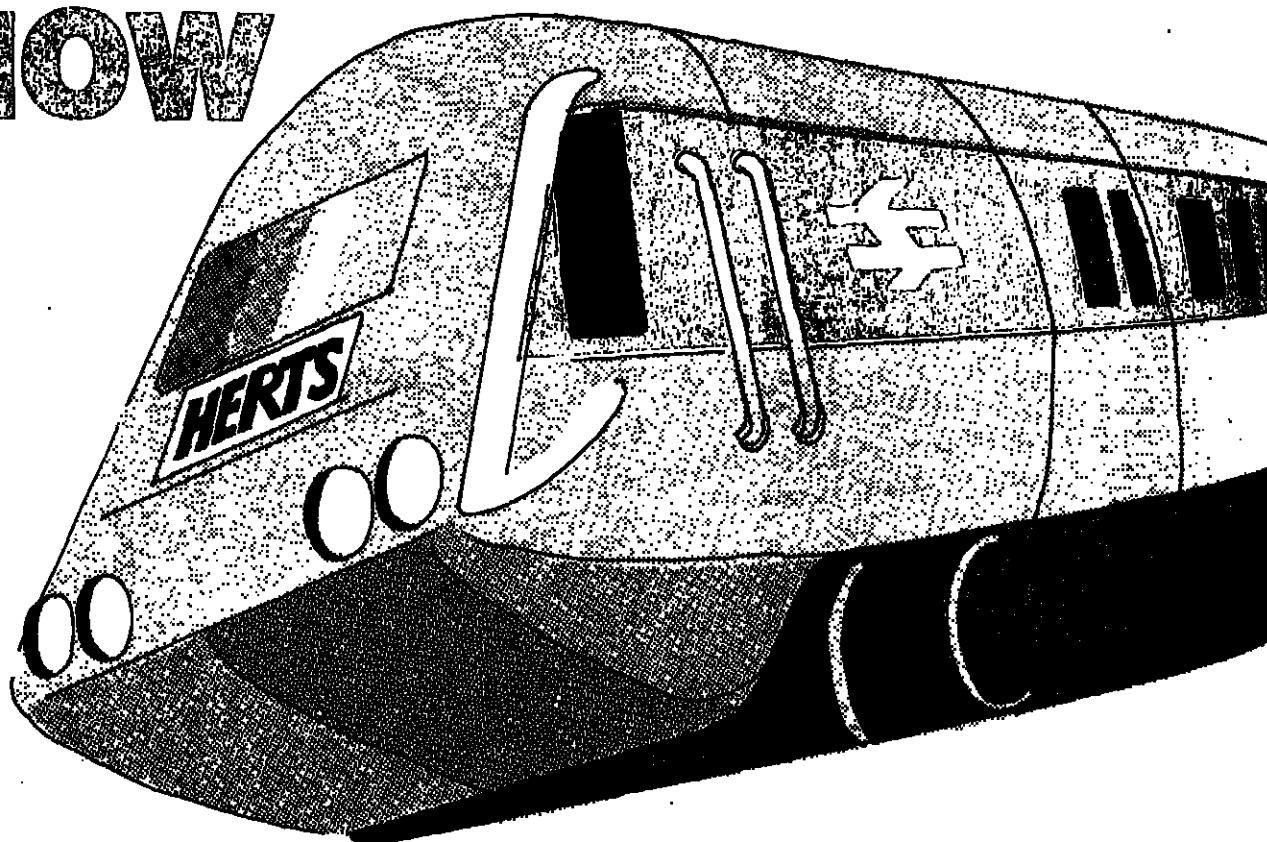
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Location: Amsterdam plus European travel. Ref: 101/82
Contact: Mark Clifford.

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Location: London, Home Counties and South Wales Ref: 201/82

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Location: Home Counties Ref: 301/82
Contact: Edith Watson.

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Cornwall

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The programming team headers will assess junior staff, interview and be involved with all other management duties.

The successful candidate should have a minimum of 5 years' Cobol programming experience, coupled with one year's exposure to CICS, DL/1 and IMS database. An excellent profit sharing scheme is in force, combined with discounts on company products. Contact Jenny Burr on 01-629 8863.

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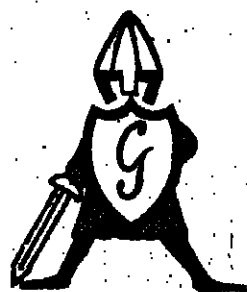
In order to continue our expansion we now require the following staff in our Manchester office.

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Analyst Programmers and Programmers MUST have RPG II experience preferably but not essentially gained on IBM equipment.

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(0183)

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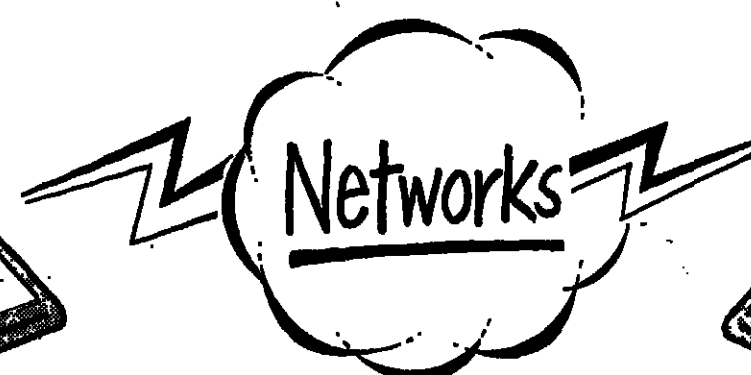
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(0183)

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Our client is embarking on the development of one of the largest multiple node networks of computer communications systems in Europe. Being a large, successful manufacturing company they have the facilities and credibility to handle a project of this size. Early study and planning phases are initiated but the main design and implementation teams will be newly recruited.

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To be considered for a Senior Programmer post you must have at least 3 years relevant DP experience and a 1st or 2nd class honours degree. For Programmer posts you need at least 18 months experience and a minimum of 2 'A' levels or equivalent.

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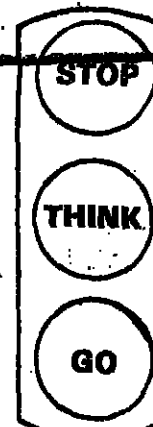


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* We require someone with 6-12 months experience working in a Mainframe environment, preferably a DEC (VAX) system.

* Based in the City you will be working on a DEC 11/750 using VAX/VMS, operating on a two shift system. In addition some clerical/administrative work is involved.

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Computer Training

The Computing Division of the Rutherford Appleton Laboratory uses a wide selection of equipment including IBM, PRIME, GEC and ICL PERQ computers, and a variety of graphics devices from simple terminals to a sophisticated micro-film recorder. The most commonly used languages are FORTRAN, PASCAL and BASIC. A number of packages and libraries are used including the GINO-F graphics system and several database systems.

A computer training organiser is required by the Computing Division to design and run courses for staff and users of the Laboratory computing equipment.

Initially the person would take responsibility for the intensive training scheme for Junior Staff recruited directly from local sixth forms.

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The person recruited must have teaching experience, a general level of computing knowledge, be able to organise, liaise with teachers and computing specialists and be keen to gain a broad knowledge of the Division's computers and the languages and software systems in current use.

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(0140)

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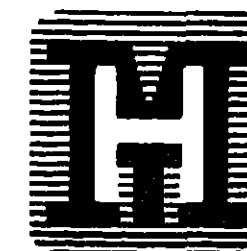
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SALES BIT

Quality of Management - 17

Freedom from stress has to be worked at

MOST managers are exposed to stress some of the time, and many have to put up with it most of the time. Some managers manage to maintain an air of apparent tranquillity in the most dire circumstances, whereas others become worriers at the slightest setback.

It is never easy to tell whether or when a particular person might be affected by the stress of the job and its accompanying circumstances. Usually the first person, and often the only person, to realise that somebody has a stress-related problem is the sufferer.

As I explained last week, one of the primary effects of anxiety and fear is to put the involuntary nervous system into a tizzy, because of the way it was programmed back in the primordial slime. As a result it generates a variety of physical symptoms that may not be valid in the direct sense, eg increased heart beat without any muscular demand for increased blood flow, but pertinent in its implication that something is wrong and must be put right before it gets out of hand.

The nature of such early warning signals varies widely, but at the individual level they tend to exploit an area of fundamental weakness. With some people stress always rears its ugly head in the form of indigestion; with others it may be headaches or insomnia.

In his book, *Stress Control*, Vernon Coleman lists what he considers the most important physical signs of impending illness arising from stress overload: chest pains, diarrhoea, headaches, indigestion, insomnia, palpitations, tiredness. He also lists a number of mentally-related indications of the same situation - inability to relax, intolerance, irritability and short temper, poor memory, inability to concentrate, reduced will power, uncontrolled emotions, inability to complete tasks, impulsive behaviour, over-reaction.

What causes stress? Almost anything can cause anxiety for someone; it all depends on the nature of the individual. In business there are obvious things like demotion, loss of job, failure to achieve, and so on. In the same book Vernon Coleman quotes from *The Social Readjustment Rating Scale* by Holmes and Rahe, which lists, in order of precedence, the problems most likely to cause stress: Death of spouse; divorce; marital separation; imprisonment; death of close relative; personal injury or illness; marriage; being sacked at work; retirement.

In the complete list of 26 categories that situation familiar to all salespeople: "change of financial state" comes 14th and "change of job or major change of work responsibility" comes 16th.

Our automatic reaction to a stress situation, be it that of our own or of someone else, is to assume that it has a single root cause. Often this is not the case; it is rather an accumulation of problems that can all be handled individually, but when they occur at the same time are overwhelming.

Dealing with stress in a constructive manner is easier said than done. I believe that I have grown to understand it but have fallen far short of overcoming it. If you are the type of person who operates under burden of a self-inflicted work ethic, it is difficult to ease off when the pressure is on.

However, self-discipline is essential if long-term survival from business stress is to be achieved. Working every evening and weekend to tie down a job is not smart. There has to be time for contrast in the form of exercise and mental relaxation.

If you don't look after yourself no-one else will, least of all the company on whose behalf you appear to be making your sacrifice. If there truly are not enough hours in the day to do your job properly, then this can only be for any of three reasons: you are badly organised; your job was designed for more than one person; you are working for the wrong company.

Whether it is, the problem must be resolved in some other manner than working yourself into a nervous breakdown.

Freedom from stress can only occur within a job that is truly within one's capabilities and provides real satisfaction. Ambition can be a dreadful trap if it takes us beyond the threshold of our talents, for the price is often nervous disorder that inevitably accompanies the anxiety of failure.

Freedom from stress and its consequences has to be worked at. It cannot be left to circumstance, particularly for those prone to worry. Being happy in one's job in terms of the task itself, one's colleagues and company is extremely important.

Let's face it, even if you've really got your act together, fate is bound to come and slap something in your face just when you least expect it!

Alan Williams

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